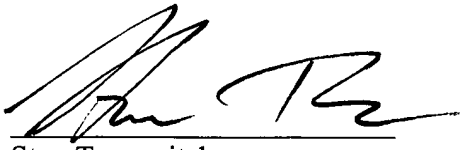
REMARKS

With regard to the amendments to claims 1, 3, 5, 6 and 8, as set forth above, Applicants note that these claims are amended more fully to cover all aspects of Applicants' invention, and, in particular, more clearly to define the scope of the invention as not being limited to the specific implementations recited in the original claims 1, 3, 5, 6 and 8 (Applicants add dependent claims 10-14 to recite these particular embodiments of the invention).

Also, Applicants respectfully submit that claims 6 and 8 have been rewritten in independent form, and therefore contain no additional limitations, and that the additional amendments to claims 1, 3, 5, 6 and 8, as well as to claims 2, 4, 7 and 9, do not narrow the scope of these claims, but are made to correct grammatical errors, and thus contain no additional limitations, and to edit the claims for precision of language without narrowing the claims, and thus are not subject to *Festo* estoppel.

Entry and consideration of this Amendment is respectfully requested.

Respectfully submitted,



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APPENDIX

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

The claims are amended as follows:

1. (Amended) [Method] A method of increasing noise immunity during reception of signals from satellites of navigational systems comprising:

decoding signals having a carrier coded with a pseudo-random sequence [, including generation of];

generating a local difference [(early-minus-late)] copy of an input signal [in which the], wherein a delay d between [the] an early copy and a late [copies] copy of the input signal makes up a fractional part of [the] a character of the pseudo-random sequence [d, generation of a punctual (exact)];

generating an exact copy of [an] the input signal; [and generation of]

generating a sequence of gating digital signals[, *characterized in that* the gating signal length is set];

setting a length of the gating digital signals equal to the delay d [between the early and late copies of the signal,];

selecting a character polarity [is selected so that it coincides] of the gating digital signals to coincide with [the] a polarity of a previous character of the exact copy; and [its beginning is delayed]

delaying a beginning of the gating digital signals relative to [the] an end of the character of the exact copy of the pseudo-random sequence by a value equal to d/2

[, thereby affecting correlation of the input signal comprising, in addition to the direct signal, also a plurality of delayed multipath signals, with the exact copy and with a signal representing a mixture of the difference copy and the sequence of gating digital signals, the correlation results are stored in accumulators and form a discriminator signal, for tracing the delay of the code, in a form of $I_{E-L+K}I_P + Q_{E-L+K}Q_P$, I_{E-L+K}, Q_{E-L+K} are the in-phase and quadrature components of the results of correlation of the input signal with the signal representing a mixture of the difference copy and a sequence of the gating digital signals, I_P, Q_P are the in-phase and quadrature components of the results of correlation of the input signal with the signal of the exact copy, thereby performing the adjustment of the exact and difference copy of the signal based on the discriminator signal so that error signal is influenced only by the input signal of direct visibility and is not influenced by the multipath signals].

2. (Amended) A method as claimed in claim [1, *characterized in that]* 10, wherein the input signal correlation is performed separately for the exact copy of the input signal, for the difference copy of the input signal and for the sequence of the gating digital signals; the

correlation results are stored in [the] corresponding quadrature accumulators; the discriminator signal [of the discriminator] is formed as $I_{E-L}I_P + Q_{E-L}Q_P$, where I_{E-L}, Q_{E-L} are [the] in-phase and quadrature components of the results of correlation of the input signal with the difference copy signal, I_P, Q_P are [the] in-phase and quadrature components of the results of correlation of the input signal with the exact copy signal, [then the] the method further comprising:

comparing value of the accumulators containing the results of correlation of the input signal, with the sequence of gating digital signals $I_k^2 + Q_k^2$, [are compared] with [the] a threshold value of detection of [the] a multipath effect; and [compensate]

compensating the multipath effect in excess of the threshold value by adding [the] output value of the accumulators of gating digital signals to output value of the corresponding quadrature [outputs] accumulators of the difference copy [accumulators, producing] to produce a discriminator signal in the form:

$$\mathbf{I_{E-L}I_P + Q_{E-L}Q_P + I_kI_P + Q_kQ_P.}$$

3. (Amended) [Method] A method of increasing noise immunity during reception of signals from satellites of navigational systems comprising:

decoding signals having a carrier coded with a pseudo-random sequence [, including generation of a local];

generating an early copy of an input signal[, generation of];

generating a [local] late copy of an input signal, wherein [the] a delay d between the early and late copy of the input signal makes up a fractional part of [the] a character of the pseudo-random sequence; [d, generation of]

generating a sequence of gating digital signals[, characterized in that];

setting a length of the gating [signal length is set] digital signals equal to the delay d [between the early and late copy of the signal,];

selecting a character polarity [is selected so that it coincides] of the gating digital signals to coincide with [the] a polarity of a previous character of [the] an exact copy of the input signal; and

[its] delaying a beginning [is delayed] of the gating digital signal relative to [the] an end of the character of the exact copy of the pseudo-random sequence by a value equal to d/2

[, thereby affecting correlation of the input signal comprising, in addition to the direct signal, a plurality of delayed multipath signals, with the early copy, correlation of the input signal with the late copy, correlation of the input signal with the signal representing a sequence of gating digital signals, storage of the correlation results in accumulators and generation of a discriminator signal for tracing the delay of the code in a form of $I_E^2 + Q_E^2 - I_L^2 - Q_L^2 + I_K^2 + Q_k^2$, where I_E, Q_E are the in-phase and quadrature components of the results of correlation of the early copy, the I_L, Q_L are the in-phase and quadrature components of the results of correlation of the

late copy, I_K, Q_K are the in-phase and quadrature components of the results of correlation of the sequence of gating digital signals].

4. (Amended) A method as claimed in claim [3, *characterized in that*] 11, further comprising, when tracing the delay of the code [delay,]:

determining a value of the discriminator [value is determine] signal as: $I_E^2 + Q_E^2 - I_L^2 - Q_L^2$ [,while the];

comparing a value of the accumulators storing the correlation results of the input signal with a sequence of gating digital signals $I_K^2 + Q_K^2$ [is compared] with [the] a threshold value of detection of [the] a multipath effect[,]; and

compensating the multipath effect exceeding the threshold value [is compensated] by adding the value from the output of the accumulators to the calculated value of the discriminator [so that it becomes] to equal [to] $I_E^2 + Q_E^2 - L_E^2 - I_L^2 - Q_L^2 + I_K^2 + Q_K^2$.

5. (Amended) A device for reception of signals of satellite navigational systems transmitting a plurality of signals with a carrier, coded by pseudo-random sequences, comprising:

a radio module receiving the input signal, converting [it] the input signal into an intermediate-frequency signal, including a plurality of signals with an intermediate frequency carrier, coded by [the] a pseudo-random sequence;

an analog-to-digital converter, converting the intermediate-frequency signal into a digital signal;

a multichannel digital correlator whose each channel decodes one of the plurality of signals coded by pseudo-random sequence[, *characterized in that* the device comprises:];

a first generator [producing a local punctual (exact)] which produces an exact copy of the signal coded by a pseudo-random sequence;

a second generator [producing] which produces a difference [(early-minus-late)] copy of the signal[,] coded by the pseudo-random sequence, [in which the] wherein a delay d between [the] an early copy and a late [copies] copy of the signal makes up a fraction of a character of the pseudo-random sequence [character], and which generates a sequence of gating digital signals [such that], wherein a length of the gating [signal] digital signals is equal to the delay d [between the early and late copies of the signal], [the] a polarity of the character of the gating digital signals coincides with [the] a polarity of the previous character of the exact copy of the signal coded by the pseudo-random sequence and [its] a beginning of the gating digital signals is delayed relative to [the] an end of the character of the exact copy of the pseudo-random sequence by a value equal to d/2

[; a mixer performing the multiplication (correlation) of quadrature counts of the input signal by the counts of the exact copy; a mixer performing multiplication of the quadrature

counts of the input signal by the counts of the signal, representing a mixture of the difference copy and a sequence of gating digital signals; quadrature accumulators accumulating the correlation results; a device adjusting the delay of the local copy of the signal coded by the pseudo-random sequence depending on the error signal from discriminator output calculated on the basis of the counts of the accumulators as: $I_{E-L+K}I_P + Q_{E-L+K}Q_P$, where I_{E-L+K}, Q_{E-L+K} are the in-phase and quadrature components of the results of correlation of the input signal with the signal representing a mixture of the difference copy and the sequence of gating digital signals, I_P, Q_P are the in-phase and quadrature components of the results of correlation of the input signal with the signal of the exact copy].

6. (Amended) [The device as claimed in claim 5, *characterized in that]* A device for reception of signals of satellite navigational systems transmitting a plurality of signals with a carrier, coded by pseudo-random sequences, comprising:

a radio module receiving the input signal, converting the input signal into an intermediate-frequency signal, including a plurality of signals with an intermediate frequency carrier, coded by [the] a pseudo-random sequence;

an analog-to-digital converter, converting the intermediate-frequency signal into a digital signal;

a multichannel digital correlator whose each channel decodes one of the plurality of signals coded by pseudo-random sequence,

wherein each [correlator] channel of the multichannel digital correlator comprises:

a first generator of [a local punctual (exact)] an exact copy of the signal coded by a pseudo-random sequence;

a second generator of a difference [(early-minus-late)] copy of the signal coded by the pseudo-random sequence, [in which the] wherein a delay d between [the] an early copy and a late [copies] copy makes up a fraction of a character of the pseudo-random sequence [character];

a third generator producing a sequence of gating digital signals, [such that] wherein a length of the gating [signal length] digital signals is equal to the delay d [between the early and late copies of the signal], [the] a polarity of [the] a character [coinciding] of the gating digital signals coincides with [the] a polarity of previous character of the exact copy of the signal coded by the pseudo-random sequence and [its] a beginning [being] of the gating digital signals is delayed relative to [the] an end of the character of the exact copy of the signal coded by the pseudo-random sequence by a value equal to d/2

[; a mixer performing the multiplication (correlation) of the quadrature counts of the input signal by the counts of the exact copy; a mixer performing the multiplication of the quadrature components of the input signal by the counts of the difference copy; a mixer performing the multiplication of quadrature counts of the input signal by the counts of the sequence of gating digital signals; quadrature accumulators accumulating the correlation results; a device adjusting the delay of the local copy of the signal coded by the pseudo-random sequence, depending on the error signal from the discriminator output calculated on the basis of the counts of the accumulators as: $I_{E-L}I_P + Q_{E-L}Q_P$, where I_{E-L}, Q_{E-L} are the in-phase and quadrature components of the results of correlation of the input signal with the difference copy

signal provided that $I_K^2 + Q_K^2$ does not exceed the threshold of detection of the multipath signal, where I_K, Q_K are the in-phase and quadrature components of the results of correlation of the sequence of gating digital signals].

7. (Amended) The device as claimed in claim [5, *characterized in that* each correlator channel comprises: a generator producing a local punctual (exact) copy of the signal coded by the pseudo-random sequence, a generator producing a difference (early-minus-late) copies of the signal coded by the pseudo-random sequence, in which the delay ***d*** between the early and late copies makes up a fraction of the character of the pseudo-random sequence; a generator producing a sequence of gating digital signals, such that the gating signal length is equal to the delay ***d*** between the early and late copies of the signal, the polarity of the character coinciding with the polarity of the previous character of the exact copy and its beginning being delayed relative to the end of the character of the exact copy of the pseudo-random sequence by a value equal to d/2;] 6, further comprising:

a first mixer performing [the] multiplication [(correlation)] of [the] quadrature counts of the input signal by [the] counts of the exact copy of the signal coded by the pseudo-random sequence;

a second mixer performing [the] multiplication of the quadrature counts of the input signal by [the] counts of the difference copy;

a third mixer performing [the] multiplication of the quadrature counts of the input signal by [the] counts of the sequence of gating digital signals;

performing the multiplication of the quadrature counts of the input signal by the counts of the sequence of gating digital signals; quadrature accumulators accumulating the correlation results; a device adjusting the delay of the local signal copy, coded by the pseudo-random sequence, depending on the error signal from the discriminator output calculated on the basis of the counts of the accumulators as: $I_E^2 + Q_E^2 - I_L^2 - Q_L^2 + I_K^2 + Q_K^2$, where I_E, Q_E are the in-phase and quadrature components of the results of correlation of the early copy, I_P, Q_P are in-phase and quadrature components of the results of correlation of the late copy, I_K, Q_K are the in-phase and quadrature components of the results of correlation of the sequence of gating digital signals].

9. (Amended) The device as claimed in claim [5, *characterized in that*] 12, wherein

a value of the signal of the discriminator [signal] for the device [tracing] adjusting the [code] delay is determined as $I_E^2 + Q_E^2 - I_L^2 - Q_L^2$, and

the value of the accumulators [storing the], which store results of correlation of the input signal with the sequence of gating digital signals $I_k^2 + Q_K^2$, [the detected multipath effect] is compared with [the] a threshold value and, if [the] a detected multipath effect exceeds the threshold value, [the] output values of the accumulators are added to the [calculated] determined value of the signal of the discriminator [value so that it becomes] to equal [to] $I_E^2 + Q_E^2 - I_L^2 - Q_L^2 + I_K^2 + Q_K^2$.

quadrature accumulators accumulating [the correlation] results of the multiplication performed by the first, second and third mixers; and

a device adjusting the delay of the [local signal] exact copy[,] of the signal coded by the pseudo-random sequence[,] depending on [the] an error signal from [the] an output of [the] a discriminator calculated on [the] a basis of [the] counts of the accumulators as $I_{E-L}I_P + Q_{E-L}Q_P + I_K I_P + Q_K Q_P$ provided that [the] a threshold of detection of [the] a multipath signal is exceeded, where I_p, Q_p are in-phrase and quadrature components of results of correlation of the input signal with the exact copy signal; I_{E-L}, Q_{E-L} are in-phrase and quadrature components of results of correlation of the input signal with the difference copy signal; and I_k, Q_k are in-phrase and quadrature components of results of correlation of the sequence of gating digital signals.

8. (Amended) A device for reception of signals of satellite navigational systems transmitting a plurality of signals with a carrier, coded by pseudo-random sequences, comprising:

a radio module receiving the input signal, converting the input signal into an intermediate-frequency signal, including a plurality of signals with an intermediate frequency carrier, coded by [the] a pseudo-random sequence;

an analog-to-digital converter, converting the intermediate-frequency signal into a digital signal;

a multichannel digital correlator whose each channel decodes one of the plurality of signals coded by pseudo-random sequence [The device as claimed in claim 5, *characterized in that]*,

wherein each [correlator] channel of the multichannel digital correlator comprises:

a first generator producing [a local] an early copy of a signal coded by a pseudo-random sequence;

a second generator producing a late copy of [a] the signal coded by [a] the pseudo-random sequence, [in which the] wherein a delay d between the early and late copies makes up a fraction of [the] a character of the pseudo-random sequence;

a third generator producing a sequence of gating digital signals, wherein a length of [such that] the gating [signal length] digital signals is equal to the delay d [between the early and late copies of the signal], [the] a polarity of [this] a character [coinciding] of the gating digital signals coincides with [the] a polarity of previous character of [the] an exact copy of the signal coded by the pseudo-random sequence and [its] a beginning [being] of the gating digital signals is delayed relative to [the] an end of the character of the exact copy of the signal coded by the pseudo-random sequence by a value equal to d/2

[; a mixer performing the multiplication (correlation) of the quadrature counts of the input signal by the counts of an early copy; a mixer performing the multiplication of the quadrature counts of the input signal by the counts of the late copy; a mixer